Claims:

1. A compound of the general formula (I),

$$R_{2}$$
 R_{1}
 R_{13}
 R_{14}
 R_{16}
 R_{17}
 R_{16}
 R_{17}
 R_{16}
 R_{17}
 R_{18}
 R_{19}

General Formula (I)

5

10

15

20

25

wherein A may be either -CR₁₁R₁₂-, -C=O or -SO₂-;

 $R_{1},\;R_{2},\;R_{3},\;R_{4},\;R_{6},\;R_{7},\;R_{8},\;R_{9},\;R_{11},\;R_{12},\;R_{13},\;R_{14}\;\text{and}\;R_{15}\;\text{may}\;\text{be}\;\text{same}\;\text{or}\;\text{different}$ and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, perhaloalkoxy, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups selected from linear or branched (C_1 - C_{12})alkyl, (C_2-C_{12}) alkenyl, (C_2-C_{12}) alkynyl, (C_3-C_7) cycloalkyl, (C_3-C_7) cycloalkyl, bicycloalkyl, bicycloalkenyl, (C_1-C_{12}) alkoxy, cyclo (C_3-C_7) alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino. arylamino. diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl. aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R_1 and R_2 or R_2 and R_3 or R_3 and R_4 or R_6 and R_7 or R_7 and R_8 or R_8 and R_9 together with carbon atoms to which they are attached may form a five or a six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally R_{11} and R_{12} together

with the carbon atoms to which they are attached may form a three to six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally either R_{11} or R_{12} with may form bond with either R_{16} or R_{17} to form a 5, 6 or 7–membered heterocyclic ring, which may be further substituted with R_{14} and R_{15} , and may have either one, two or three double bonds;

 R_{13} , R_{16} and R_{17} may be same or different and each independently represents Hydrogen, substituted or unsubstituted groups selected from linear or branched (C₁-C₁₂)alkyl, (C2-C12)alkenyl, (C2-C12)alkynyl, (C₃-C₇)cycloalkyl, $(C_3-$ C₇)cycloaikenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl. heterocyclylalkyl; optionally R_{13} along with either R_{16} or R_{17} and the two nitrogen atoms may form a 5, 6 or 7-membered heterocyclic ring, which may be further substituted with R_{14} and R_{15} , and may have either one, two or three double bonds; and

"n" is an integer ranging from 1 to 4, wherein the carbon chains which "n" represents may be either linear or branched.

2. A compound according to Claim -1 which is selected from :

5

10

15

30

- 10-(4-Methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 1-Bromo-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 1-Chloro-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide:
- 25 2-Bromo-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 2-Bromo-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide hydrochloride salt;
 - 2-Methoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide:
 - 2-Methoxy-12-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza
 - benzo[4,5]pentaleno[1,2-b]naphthalene-5,5-dioxide;
 - 2-Ethoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
- 2-Ethoxy-8-methyl-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene 5,5-dioxide;

2-Benzyloxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza- indeno[2,1-a]indene-5,5-dioxide:

- 2-Cyclopentyloxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-azaindeno[2,1a]indene-5,5-dioxide;
- 5 2-Cyclohexyloxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1a]indene-5,5-dioxide;
 - 2-(Furan-2-ylmethoxy)-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1alindene-5,5-dioxide;
 - 1,2,3-Trichloro-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1a]indene-5,5-dioxide;
- 10 2,8-Dimethoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1a]indene-5,5-dioxide;
 - 2-Bromo-8-methoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1a]indene-5,5-dioxide;
- 15 8-Methoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide:
 - 8-Methoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide hydrochloride salt;
 - 8-Isopropoxy-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide:
- 20
 - 2-Bromo-8-methyl-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1alindene-5,5-dioxide;
 - 4-Methyl-10-(4-methylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5dioxide;
- 8-Methyl-10-[1-(4-methylpiperazin-1-yl)ethyl]-5-thia-4b-aza-indeno[2,1-25 (RS) a]indene-5,5-dioxide;
 - 2-Methoxy-10-[1-(4-methylpiperazin-1-yl)ethyl]-5-thia-4b-aza-indeno[2,1-(RS) a]indene-5,5-dioxide;
- (RS) 2-Bromo-8-methoxy-10-[1-(4-methylpiperazin-1-yl)ethyl]-5-thja-4b-aza-30 indeno[2,1-a]indene-5,5-dioxide;
 - 1-[4-(8-Methoxy-5,5-dioxo-5H-5D6-thia-4b-aza-indeno[2,1-a]inden-10-(RS) ylmethyl)-2-methylpiperazin-1-yl]ethanone; 10-(4-Pyridin-2-yl-piperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5dioxide:
- 35 8-Methoxy-10-(4-pyridin-2-yl-piperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1a]indene-5,5-dioxide;

- 2-Isopropoxy-10-(4-benzoylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
- 2-(Furan-2-ylmethoxy)-10-(4-benzoylpiperazin-1-ylmethyl)-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
- 5 10-(4-Benzylpiperazin-1-ylmethyl)-8-methyl-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 10-(4-Benzylpiperazin-1-ylmethyl)-8-methoxy-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 2-Methoxy-10-piperazin-1-ylmethyl-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
- 2-lsopropoxy-10-piperazin-1-ylmethyl-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 2-(Furan-2-ylmethoxy)-10-piperazin-1-ylmethyl-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 10-[1,4]Diazepan-1-ylmethyl-2-methoxy-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - 1-[4-(5,5-Dioxo-5H-5□6-thia-4b-aza-indeno[2,1-a]inden-10-ylmethyl)-[1,4]diazepan-1-yl]phenylmethanone;

15 .

- 10-(4-Ethyl-[1,4]diazepan-1-ylmethyl)-2-methoxy-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide; and
- 20 10-(4-lsopropyl-[1,4]diazepan-1-ylmethyl)-2-methoxy-5-thia-4b-aza-indeno[2,1-a]indene-5,5-dioxide;
 - or a stereoisomer, or a polymorph, or any suitable combination of above, such as a nitrogen oxide thereof; a prodrug of the compound or the nitrogen oxide; a pharmaceutically acceptable salt of the compound, the nitrogen oxide, or the prodrug; or a solvate or hydrate of the compound, the nitrogen oxide, the prodrug.
- prodrug; or a solvate or hydrate of the compound, the nitrogen oxide, the prodrug or the pharmaceutically acceptable salt.
 - 3. A process for the preparation of a compound of general formula (I),

$$R_{2}$$
 R_{13}
 R_{14}
 R_{16}
 R_{17}
 R_{16}
 R_{17}
 R_{2}
 R_{3}
 R_{4}
 R_{2}
 R_{3}
 R_{4}
 R_{2}
 R_{3}
 R_{4}
 R_{5}
 R_{8}

wherein A may be either -CR₁₁R₁₂-, -C=O or -SO₂-;

5

10

15

20

25

 $R_{1},\ R_{2},\ R_{3},\ R_{4},\ R_{6},\ R_{7},\ R_{8},\ R_{9},\ R_{11},\ R_{12},\ R_{13},\ R_{14}$ and R_{15} may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, perhaloalkoxy, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups selected from linear or branched (C1-C12)alkyl, (C₂-C₁₂)alkenyl, (C₂-C₁₂)alkynyl, (C₃-C₇)cycloalkyl, (C₃-C₇)cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C1-C12)alkoxy, cyclo(C3-C7)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino. alkylaminocarbonylamino, dialkylaminocarbonylamino. alkylamidino, alkylguanidino, dialkylguanidino, hydrazino. hydroxylamino. carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R_1 and R_2 or R_2 and R_3 or R_3 and R_4 or R_6 and R_7 or R_7 and R_8 or R_8 and R_9 together with carbon atoms to which they are attached may form a five or a six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally R_{11} and R_{12} together with the carbon atoms to which they are attached may form a three to six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally either

 R_{11} or R_{12} with may form bond with either R_{16} or R_{17} to form a 5, 6 or 7–membered heterocyclic ring, which may be further substituted with R_{14} and R_{15} , and may have either one, two or three double bonds;

 R_{13} , R_{16} and R_{17} may be same or different and each independently represents Hydrogen, substituted or unsubstituted groups selected from linear or branched (C₁-C₁₂)alkyl, (C2-C12)alkenyl, (C₂-C₁₂)alkynyl, (C₃-C₇)cycloalkyl, (C₃-C₇)cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl, heterocyclylalkyl; optionally R_{13} along with either R_{16} or R_{17} and the two nitrogen atoms may form a 5, 6 or 7-membered heterocyclic ring, which may be further substituted with R₁₄ and R₁₅, and may have either one, two or three double bonds; and

5

10

15

20

"n" is an integer ranging from 1 to 4, wherein the carbon chains which "n" represents may be either linear or branched; which comprises reacting a compound of formula (II) given below,

$$R_{13}$$
 R_{14}
 R_{16}
 R_{17}
 R_{10}
 R

wherein R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{13} , R_{14} , R_{15} , R_{16} , R_{17} , A and n are as defined previously, or precursor thereof, while either R_5 or R_{10} is a halogen atom such as bromo, chloro or iodo, and the other is hydrogen; with a Pd(0) or Pd (II) derivative as a catalyst.

4. A process for the preparation of a compound of general formula (I),

$$R_{2}$$
 R_{13}
 R_{14}
 R_{16}
 R_{17}
 R_{16}
 R_{17}
 R_{18}
 R_{19}
 R_{19}

wherein A may be either -CR₁₁R₁₂-, -C=O or -SO₂-;

5

10

15

20

25

 $R_1,\ R_2,\ R_3,\ R_4,\ R_6,\ R_7,\ R_8,\ R_9,\ R_{11},\ R_{12},\ R_{13},\ R_{14}$ and R_{15} may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, perhaloalkoxy, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups selected from linear or branched (C1-C12)alkyl, (C₂-C₁₂)alkenyl, (C₂-C₁₂)alkynyl, (C₃-C₇)cycloalkyl, (C₃-C₇)cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C_1-C_{12}) alkoxy, cyclo (C_3-C_7) alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, arvioxycarbonyl. aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl. hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino. alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino. alkylguanidino, dialkylguanidino, hydrazino. hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R_1 and R_2 or R_2 and R_3 or R_3 and R_4 or R_6 and R_7 or R_7 and R_8 or R_8 and R_9 together with carbon atoms to which they are attached may form a five or a six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally R_{11} and R_{12} together with the carbon atoms to which they are attached may form a three to six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally either

 R_{11} or R_{12} with may form bond with either R_{16} or R_{17} to form a 5, 6 or 7–membered heterocyclic ring, which may be further substituted with R_{14} and R_{15} , and may have either one, two or three double bonds;

5

10

15

20

25

 R_{13} , R_{16} and R_{17} may be same or different and each independently represents Hydrogen, substituted or unsubstituted groups selected from linear or branched (C_1-C_{12}) alkyl, (C₂-C₁₂)alkenyl. (C₂-C₁₂)alkynyl, (C₃-C₇)cycloalkyl, $(C_{3}-$ C₇)cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl. heterocyclylalkyl; optionally R_{13} along with either R_{16} or R_{17} and the two nitrogen atoms may form a 5, 6 or 7-membered heterocyclic ring, which may be further substituted with R₁₄ and R₁₅, and may have either one, two or three double bonds; and "n" is an integer ranging from 1 to 4, wherein the carbon chains which "n" represents may be either linear or branched; which comprises reacting a which comprises reacting a compound of formula (III) given below,

$$R_{2}$$
 R_{3}
 R_{4}
 $O_{2}S$
 R_{9}
 R_{8}
(III)

wherein all the symbols are as defined earlier with a compound of formula wherein A, R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 and R_9 are as defined in relation to formula (I); X is a hydrogen, or a leaving group such as hydroxy, mesyl, tosyl or halogeno, for example a chloro, bromo or iodo and the like; with a compound of formula (IV) or its acid addition salt,

where all the symbols are as defined earlier; and X is halogen, preferably chloro, bromo or iodo.

5. A process for the preparation of compound of formula (I) wherein A is $-CH_{2}$ - which comprises chemically or catalytically reducing compounds wherein A = CO, wherein all the symbols are as defined above..

5

10

15

- 6. A process according to Claim-6 or Claim 7, comprising of carrying out one or more of the following optional steps: i) removing any protecting group; ii) resolving the racemic mixture into pure enantiomers by the known methods and iii) preparing a pharmaceutically acceptable salt of a compound of formula (I) and/or iv) preparing a pharmaceutically acceptable a prodrug thereof.
- 7. A pharmaceutical composition comprising either of a pharmaceutically acceptable carrier, diluent, excipients or solvate along with a therapeutically effective amount of a compound according to Claim-1, its stereoisomers, its radioisotopes, its Noxides, its polymorphs, its pharmaceutically acceptable salts, its pharmaceutically acceptable solvates, its useful bio-active metabolites and any suitable combination of the above.
- 8. A pharmaceutical composition according to Claim-3, in the form of a tablet, capsule, powder, syrup, injectable, solution or suspension.
 - 9. Novel intermediates defined by general formula (III),

$$R_3$$
 R_4
 O_2 S
 R_8
(III)

25

wherein A may be either -CR₁₁R₁₂-, -C=O or -SO₂-;

X is a either of a hydrogen, a leaving group such as hydroxy, mesyl, tosyl or a halogeno, for example a chloro, bromo or iodo;

 $R_1,\ R_2,\ R_3,\ R_4,\ R_6,\ R_7,\ R_8,\ R_9,\ R_{11}$ and R_{12} may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, perhaloalkoxy, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups selected from linear or branched (C1-C12)alkyl, (C2- C_{12})alkenyl, (C_2-C_{12}) alkynyl, (C_3-C_7) cycloalkyl, (C_3-C_7) cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C_1-C_{12}) alkoxy, cyclo (C_3-C_7) alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino. diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl. heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl. dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino. alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino. alkylguanidino, dialkylguanidino, hydrazino. hydroxylamino. carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R_1 and R_2 or R_2 and R_3 or R_3 and R_4 or R_6 and R_7 or R_7 and R_8 or R_8 and R_9 together with carbon atoms to which they are attached may form a five or a six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally R₁₁ and R₁₂ together with the carbon atoms to which they are attached may form a three to six membered ring, optionally containing one or more double bonds and optionally containing one or more heteroatoms selected from "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or optionally either R_{11} or R_{12} are such substituents which may allow formation of bond with either R_{16} or R_{17} to form a 5, 6 or 7-membered heterocyclic ring; and its stereoisomers and its salts.

30

25

5

10

15

20

10. A process provided for the preparation of novel intermediate of the general formula (III), according to any one of the routes which comprises of, Route 1: cyclizing a compound of formula (V) given below.

5

10

15

20

$$R_2$$
 R_3
 R_4
 R_4
 R_5
 R_6
 R_6
 R_7
 R_8
 R_8
 R_8

wherein X, A, R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 and R_9 are as defined earlier; and either of R_{10} or R_5 is a halogeno, for example a chloro, bromo or iodo and the like while other is hydrogen; using a Pd(0) or Pd (II) derivative as a catalyst, for example tetrakis triphenylphosphine palladium, (Bis-tri-o-tolylphosphine) palladium; and

Route 2 : compounds of general formula (III) wherein A is SO₂ may be prepared by converting a compound of formula (VII) given below,

$$R_{3}$$
 R_{4}
 $O_{2}S$
 R_{9}
 R_{8}
 R_{8}
 (VII)

wherein X_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 and R_9 are as defined in relation to formula (III); by metallation and followed by reaction with SO₂ gas and N-chlorosuccinimide.

11. Use of the compounds as claimed in Claim -1, in combination with other pharmaceutical agents, such as apo-B/MTP inhibitors, MCR-4 agonists, CCK-A agonists, monoamine reuptake inhibitors, sympathomimetic agents, adrenergic receptor agonists, dopamine agonists, melanocyte-stimulating hormone receptor

analogs, cannabinoid 1 receptor antagonists, melanin concentrating hormone antagonists, leptins, leptin analogs, leptin receptor agonists, galanin antagonists, lipase inhibitors, bombesin agonists, neuropeptide-Y antagonists, thyromimetic agents, dehydroepiandrosterone or analogs thereof, glucocorticoid receptor agonists or antagonists, orexin receptor antagonists, urocortin binding protein antagonists, glucagon-like peptide-1 receptor agonists, ciliary neurotrophic factors, AGRPs (human agouti-related proteins), ghrelin receptor antagonists, histamine 3 receptor antagonists or reverse agonists, neuromedin U receptor agonists, in a therapeutically effective amount via a suitable pharmaceutical composition, to achieve the desired effect in mammals as well as humans.

- 12. Use of compound of general formula (I), as defined in Claim-1 or a pharmaceutical composition as defined in Claim-3 for preparing the medicaments.
- 13. Use of a compound as claimed in Claim-1 for the treatment and/or prevention of 15 clinical conditions such as anxiety, depression, convulsive disorders, obsessivecompulsive disorders, migraine headache, cognitive memory disorders, ADHD (Attention Deficient Disorder/ Hyperactivity Syndrome), personality disorders, psychosis. paraphrenia. psychotic depression, mania. schizophrenia, schizophreniform disorders, withdrawal from drug abuse, panic attacks, 20. chronobiological abnormalities, circadian rhythms, anxiolytic, osteoporosis, ischemic stroke, lower the risk of SIDS in young infants with low endogenous melatonin levels, reproduction, glaucoma, sleep disorders and also disorders associated with spinal trauma and /or head injury.

25

5

10

- 14. Use of a compound as claimed in Claim-1 for the treatment of mild cognitive impairment and other neurodegenerative disorders like Alzheimer's disease, Parkinsonism and Huntington's chorea.
- 15. Use of a compound as claimed in Claim-1 for the treatment of certain GI (Gastrointestinal) disorders such as IBS (Irritable bowel syndrome) or chemotherapy induced emesis:
- 16. Use of a compound as claimed in Claim-1 to reduce morbidity and mortality associated with the excess weight.

WO 2004/055026

17. Use of a radiolabelled compound as claimed in Claim-1, as a diagnostic tool for modulating 5-HT and/or Melatonin receptor function.